with the second magnetic pole section 212 via the insulating body 213. The tip section 212B of the second magnetic pole section 212 faces the other end edge 211Ab of the main section 211A with a specified distance between them, and in this way magnetic gap G is formed. A passage hole 212C for allowing passage of the electron beam is provided in the tip section 212B, coaxially with the optical axis X.--

A5 cont'd

IN THE CLAIMS:

Please amend claims 1-8 as follows:

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1. (Amended) An electromagnetic field superimposed lens having an electrical field bi-potential lens accommodated within a magnetic field lens, wherein:

a magnetic pole of the magnetic field lens is divided into a first magnetic pole section to which an earth potential is applied during use, and a second magnetic pole section facing a sample, a negative potential being applied to the second magnetic pole and to the sample during use, and the first and second magnetic pole sections being electrically insulated from each other; and

the electric field bi-potential lens comprises an electrode connected to the first magnetic pole section so as to surround an electron beam path of the superimposed lens, and the second magnetic pole section.

2. (Amended) An electromagnetic field superimposed lens according to claim 1; further comprising an electrically insulating member disposed between confronting ends of the first and second electromagnetic pole sections such that the first and second electromagnetic pole sections and the electrically insulating member form an integral body.

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3. (Amended) An electromagnetic field superimposed lens according to claim 2; further comprising an excitation coil attached to an overhang portion of the first electromagnetic pole section extending radially from the electron beam path; wherein the second magnetic pole section extends from the electrically insulating member towards the sample and becomes narrower in cross-sectional diameter as it approaches the sample, and a magnetic gap is formed between ends of the first and second magnetic pole sections closest to the sample.

4. (Amended) An electromagnetic field superimposed lens according to claim 3; wherein a magnetic pole of the superimposed lens is formed on a sample side of the second magnetic pole section.

5. (Amended) An electromagnetic field superimposed lens having an electrical field bi-potential lens accommodated within a magnetic field lens: wherein

a magnetic pole of the magnetic field lens is divided into a first magnetic pole section to which an earth potential is applied during use, and a second magnetic pole section facing a sample, a negative potential being applied to the second magnetic pole section and to the sample during use, and the first and second magnetic pole sections being electrically insulated from each other; and

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the electrical field bi-potential lens comprises a high resistance body provided between the first magnetic pole section and the second magnetic pole section so as to surround an electron beam path of the superimposed lens, such that a potential difference exists between the first magnetic pole section and the second magnetic pole section.

6. (Amended) An electromagnetic field superimposed lens according to claim 5; further comprising an electrically insulating member disposed between confronting ends of the first and second electromagnetic pole sections such that the first and second electromagnetic pole sections and the electrically insulating member form an integral body.

7. (Amended) An electromagnetic field superimposed lens according to claim 6; further comprising an excitation coil attached to an overhang portion of the first electromagnetic pole section extending radially from the

electron beam path; wherein the second magnetic pole section extends from the electrically insulating member towards the sample and becomes narrower in cross-sectional diameter as it approaches the sample, and a magnetic gap is formed between ends of the first and second magnetic pole sections closest to the sample.

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8. (Amended) An electron beam device having the electromagnetic field superimposed lens according to claim 1.

Kindly add the following new claims 9-30:

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9. An electron beam device having the electromagnetic field superimposed lens according to claim 5.

10. A composite electromagnetic field lens, comprising: a magnetic field lens for producing a magnetic focusing field for focusing an electron beam along an optical axis, the magnetic field lens comprising a first magnetic pole section surrounding the optical axis and having an overhang portion extending radially outward from the optical axis, an excitation coil disposed in the overhang portion, and a second magnetic pole section extending from a location near the overhang portion toward a sample to be irradiated with the focused ion beam; and an electric field lens accommodated within the magnetic field lens for superimposing a

decelerating electric field onto the magnetic focusing field to reduce an aberration factor of the lens.

11. A composite lens according to claim 10; wherein the electric field lens is a bi-potential lens.

12. A composite lens according to claim 10; wherein the electric field lens comprises an electrode surrounding the optical axis.

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13. A composite lens according to claim 10; wherein the electric field lens comprises a high resistance body surrounding the optical axis and electrically connecting the first and second magnetic pole sections.

14. A composite lens according to claim 10; further comprising a voltage source for applying a negative potential to the second magnetic pole section and the sample and applying a ground potential to the first magnetic pole section.

15. A composite lens according to claim 10; further comprising an electrically insulating member disposed between the overhang section and the second magnetic pole section for electrically insulating the first magnetic pole section and the second magnetic pole section.

16. A composite lens according to claim 10; wherein a magnetic gap is formed between the tip of the second pole section and an end of the first pole section opposite the overhang section so that the focusing magnetic field is generated in the magnetic gap upon application of an electric current to the excitation coil.

17. A composite lens according to claim 10; wherein the second pole section has a conical shape with a tip facing the sample.

18. A composite lens according to claim 10; wherein the second pole section has a bowl shape with an open end facing the first pole section and an opposite end facing the sample.

19. A composite lens according to claim 10; wherein the electric field lens has an electrode formed of a non-magnetic conductive material.

20. A composite lens according to claim 19; wherein the electrode has an outer diameter corresponding to an inner diameter of the first pole section so that a first end of the electrode is received in the first pole section and is electrically connected thereto.

21. A composite lens according to claim 20; wherein a second end of the electrode faces the tip of the second magnetic pole section with a predetermined distance therebetween.

22. An electron beam apparatus having an electron source for producing an electron beam, and an electrostatic collimating objective lens for focusing the electron beam; wherein the electrostatic lens comprises a composite lens according to claim 10.

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23. A magnetic lens for producing a magnetic focusing field for focusing an electron beam along an optical axis, comprising: a first magnetic pole section surrounding the optical axis and having an overhang portion extending radially outward from the optical axis; an excitation coil disposed in the overhang portion; a second magnetic pole section extending from the overhang portion toward a sample to be irradiated with the focused ion beam; and a voltage source for applying a negative potential to the second magnetic pole section and the sample and applying a ground potential to the first magnetic pole section during use of the magnetic field lens.

24. A magnetic lens according to claim 23; further comprising an electric field lens accommodated within the magnetic field lens for superimposing a decelerating electric

field onto the magnetic focusing field to reduce an aberration factor of the lens.

25. A magnetic lens according to claim 24; wherein the electric field lens comprises an electrode surrounding the optical axis.

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26. A magnetic lens according to claim 24; wherein the electric field lens comprises a high resistance body surrounding the optical axis and electrically connecting the first and second magnetic pole sections.

27. A magnetic lens according to claim 23; further comprising an electrically insulating member disposed between the overhang section and the second magnetic pole section.

28. A magnetic lens according to claim 23; wherein a magnetic gap is formed between the tip of the second pole section and an end of the first pole section opposite the overhang section so that the focusing magnetic field is generated in the magnetic gap upon application of an electric current to the excitation coil.

29. A magnetic lens according to claim 23; wherein the second pole section has a conical shape with a tip facing the sample.